REMARKS

Applicants acknowledge receipt of the Office Action dated December 29, 2004. Claims 1-60 are pending in the application. Please note that claims 1, 17, 36, and 47 are independent claims. Claims 1-46 are allowed. By this Response, claim 47 is amended. The Examiner has rejected claims 47-60 under 35 U.S.C. § 112, second paragraph. In addition, the Examiner has rejected claims 47-56, 59, and 60 under 35 U.S.C. § 103(a) as being unpatentable over Cooper et al., U.S. Patent No. 5,317,156 (*Cooper*) and further in view of Mori et al., U.S. Patent No. 6,455,852 (*Mori*). Applicants believe that all pending claims are allowable over the art of record and respectfully request reconsideration and allowance of all claims.

I. Claims 47-60 are not indefinite.

The Examiner has rejected claims 47-60 under 35 U.S.C. §112, second paragraph. Specifically, the Examiner stated that "[r]egarding claim 47, the phrase 'can be used' renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention." (Office Action, page 2, section 4)

Claim 47 is an independent claim upon which claims 48-60 depend. By this Response, claim 47 has been amended to recite "wherein the portion of the fluid positioned upstream of the first volume and contained in the pre-dilution cell provides information that is transmitted to the microprocessor to determine whether and to what degree to dilute the fluid with a diluent." The Applicants respectfully submit that claim 47, as amended, satisfies the requirements of § 112. Applicants further request that the Examiner also withdraw the § 112 rejection of dependent claims 48-60, since it is submitted that independent claim 47 is allowable. Since independent claim 47 is submitted to be allowable, dependent claims 48-60 must *a fortiori* also be allowable, since they carry with them all the limitations of independent claim 47.

II. Claims 47-56, 59, and 60 are patentable over *Cooper* and *Mori*.

Applicants respectfully traverse the Examiner's rejections of claims 47-56, 59, and 60 under § 103 as being allegedly unpatentable over *Cooper* in view of *Mori*. Applicants submit that, contrary to MPEP section 2143, the Examiner has failed to make a *prima facie* case of obviousness in rejecting such claims in that (1) the Examiner has failed to cite references that teach or suggest all of the elements recited in the rejected claims, and (2) the Examiner has failed to articulate a suggestion to combine the references with a reasonable expectation of success.

Claim 47 is an independent claim upon which claims 48-56, 59, and 60 depend. Claim 47 requires "a pre-dilution cell containing a portion of the fluid positioned upstream of the first volume" and "wherein the portion of the fluid positioned upstream of the first volume and contained in the pre-dilution cell provides information that is transmitted to the microprocessor to determine whether and to what degree to dilute the fluid with a diluent." Nothing in *Cooper* teaches or suggests a pre-dilution cell containing a portion of the fluid positioned upstream of the first volume or wherein the portion of the fluid positioned upstream of the first volume and contained in the pre-dilution cell provides information that is transmitted to the microprocessor to determine whether and to what degree to dilute the fluid with a diluent. Applicants note that the Examiner in the Office Action states that "*Cooper* fails to disclose a pre-dilution cell." (Office Action, page 5, section 7)

Mori cannot supply *Cooper* with the missing limitations. *Mori* relates to determining and correcting the concentration ratio of a component gas. (*Mori*, Abstract) The Examiner states that "according to *Mori* et al. when an isotopic ratio is calculated based on reference and sample cell measurements it is advantageous to calibrate the reference sample by measuring the sample gas in pre-diluted and diluted form and dilute the sample gas according to the measurement data

obtained, and thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pre-dilution cell in the *Cooper* device since it allows for calibration of the reference sample." (Office Action, page 5, section 7, emphasis added) Nothing in *Mori* teaches or suggests a pre-dilution cell containing a portion of the fluid positioned upstream of the first volume or wherein the portion of the fluid positioned upstream of the first volume and contained in the pre-dilution cell provides information that is transmitted to the microprocessor to determine whether and to what degree to dilute the fluid with a diluent. For instance, *Mori* teaches a cell chamber 11 having a first sample cell 11a for measuring a $^{12}CO_2$ absorbance, a second sample cell 11b for measuring a $^{13}CO_2$ absorbance, and a reference cell 11c. (*Mori*, col. 7, lns. 15-19) *Mori* further teaches that gases (base gas and sample gas) are "introduced into the first sample cell 11a and then into the second sample cell 11b, and discharged therefrom. The reference gas is introduced into the reference cell 11c." (*Mori*, col. 7, lns. 21-23) In addition, *Mori* teaches that the base gas is preliminarily measured by flowing through first and second sample cells 11a, 11b and then the sample gas is preliminarily measured by flowing through first and second sample cells 11a, 11b, with dilutions of the gases made based upon these preliminary measurements. (Mori, col. 8, ln. 35 - col. 9, ln. 21; col. 10, lns. 43-48) *Mori* does not teach that such preliminary measurements made in cells 11a, 11b are upstream of cells in which the main measurements are to occur. Instead, *Mori* teaches that the main measurements of the base and sample gases are then made in the same cells, 11a and 11b, in which the dilution measurements were made. Therefore, nowhere does *Mori* teach a pre-dilution cell containing a portion of the fluid positioned upstream of the first volume and therefore does not teach wherein the portion of the fluid positioned upstream of the first volume

and contained in the pre-dilution cell provides information that is transmitted to the microprocessor to determine whether and to what degree to dilute the fluid with a diluent.

Applicants therefore respectfully submit that the Examiner has failed to articulate a *prima facie* case of obviousness in rejecting claim 47, because, contrary to MPEP § 2143, the Examiner has failed to cite references that teach or suggest all of the elements recited in the rejected claim.

Furthermore, contrary to MPEP §§ 2143.01 and 2143.02, the Examiner has failed to articulate a suggestion to combine *Cooper* and *Mori* with a reasonable expectation of success with respect to claim 47. The *prima facie* case of obviousness is thus yet further lacking.

Cooper teaches a sample cell and a reference cell for measuring a target substance. (*Cooper*, col. 4, lns. 49-53) For instance, *Cooper* teaches that "the target substance is an isotopic species $^{13}CO_2$ which is measured relative to $^{12}CO_2$." (*Cooper*, col. 4, lns. 53-55) *Cooper* further teaches that "[t]he reference cell contains a gas sample having a known, and preferably high, concentration of the target substance." (*Cooper*, col. 5, lns. 22-24) Nothing in *Mori* teaches a reference cell having a known concentration of the target substance. To the contrary, *Mori* teaches a reference gas having no concentration of the target substance. (*Mori*, col. 7, lns. 1-3) For instance, *Mori* teaches "[a] reference gas (any gas exhibiting no absorption at a wavelength for measurement, e.g., nitrogen gas) . . . ." (*Mori*, col. 7, lns. 1-3) *Mori* cannot be modified to have a known concentration of the target substance because the reference gas of *Mori* is used to clean the cells 11a, 11b between measurements of the base and sample gases, and the measured intensities of the reference gas are used for determining absorbances in the base and sample gases.

Accordingly, in view of the fact that the Examiner has not articulated a prima facie case of obviousness in respect of claim 47, Applicants respectfully request that the Examiner

withdraw the § 103 rejection and allow claim 47. Since independent claim 47 is submitted to be allowable, dependent claims 48-56, 59, and 60 must *a fortiori* also be allowable, since they carry with them all the limitations of claim 47.

III. Claims 57 and 58 are allowable.

The Examiner has objected to claims 57 and 58 and notes that "[c]laims 57,58 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claims and any intervening claims. (Office Action, page 6, section 9) Applicants respectfully submit that claims 57 and 58 are allowable as independent claim 47 to which they depend are also submitted to be allowable. Therefore, Applicants respectfully request the Examiner to withdraw the objections and allow claims 57 and 58.

IV. Conclusion

Applicants believe that in view of the foregoing remarks, all claims are allowable and that the present application is now in full condition for allowance, which action Applicants earnestly solicit. If the Examiner has any questions or comments regarding the foregoing, the Examiner is requested to telephone the undersigned.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769.

Respectfully submitted,

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